



ADVISORY NOTICE

No. 07-004

SUBJECT: Pre-hospital Administration of Amiodarone

TO: All Instructor-Coordinators
All Service Chiefs
All Training Officers

FROM: Samuel W. Adams, Training Coordinator
Division of Emergency Medical Services

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To ensure consistency in patient care, the Division of EMS has prepared the following guidelines for administration of amiodarone in the pre-hospital environment. This information is intended to supplement the current *Rhode Island Prehospital Care Protocols and Standing Orders*.

Overview	Amiodarone (Cordarone®) is an antiarrhythmic agent effective in the emergency treatment of ventricular dysrhythmias (e.g., ventricular tachycardia and ventricular fibrillation). An American Heart Association study of amiodarone in pre-hospital use found that it substantially improved the rate of survival to hospital admission when compared with lidocaine. The same study also found that amiodarone was associated with a lower incidence of post-defibrillation asystole when compared with lidocaine.
Action	Amiodarone is considered a class III antiarrhythmic in that it prolongs the QT interval. It also has actions similar to those of antiarrhythmic classes Ia, II, and IV. Amiodarone slows the heart rate and AV conduction, prolongs the refractory period, and slows intracardiac conduction.
Indications	Ventricular Fibrillation Ventricular Tachycardia (Unstable or Pulseless)
Administration	Amiodarone should be administered at the doses provided in the current <i>Rhode Island Prehospital Care Protocols and Standing Orders</i> and/or as instructed by Medical Control.

The initial bolus dose of amiodarone may be injected into the drug port in an established IV line of normal saline or Lactated Ringer's. In cardiac arrest, the initial bolus dose may be administered rapidly and undiluted. In all other clinical situations, to reduce the incidence of peripheral vein phlebitis, amiodarone should be diluted with D₅W to a concentration of less than 2 mg/mL (i.e., 150mg of amiodarone should be diluted in 100mL D₅W.) The initial bolus dose should be administered at a rate of 15mg/minute (for example, 150mg over 10 min.) in non-cardiac arrest cases.

Due to the high risk of side effects resulting from incorrect dosage, maintenance infusions of amiodarone must be administered with an IV infusion pump. The drug is mixed with D₅W using a PVC-free bag and tubing and run as an isolated IV (not piggybacked with normal saline or Lactated Ringer's solution.) Medical Control should be consulted for the appropriate rate and concentration when administering a maintenance infusion of amiodarone.

Adverse Effects	Amiodarone has been associated with a number of adverse long- and short-term effects involving the lungs, thyroid gland, liver, eyes, skin, and nerves. Bradycardia and heart block occur in 1 to 3 percent of patients receiving amiodarone. Additionally, IV administration of amiodarone may cause local phlebitis (venous inflammation).
Interactions	The actions of numerous drugs are affected by the administration of amiodarone, including many that are commonly administered to individuals with heart disease. In particular, amiodarone potentiates the actions of warfarin (Coumadin®) and digoxin. Other drugs interactions include simvastatin (Zocor®), sildenafil (Viagra®), cyclosporin (Sandimmune®), flecainide (Tambocor®), propafenone (Rythmo®), and dofetilide (Tikosyn®).
Contraindications	<p>Amiodarone is contraindicated in the following patients:</p> <ul style="list-style-type: none">▪ Individuals with known sensitivity (i.e., anaphylaxis);▪ Patients with sinus bradycardia, 1st, 2nd, 3rd degree heart block without a pacemaker;▪ Individuals in cardiogenic shock;▪ Neonates (benzyl alcohol may cause fatal "gasping syndrome"). <p>Because of the complex actions and diverse side effects of amiodarone, there are additional considerations when administering the drug:</p> <ul style="list-style-type: none">▪ Individuals with baseline depressed lung function should be monitored closely;▪ Amiodarone can worsen the cardiac arrhythmia brought on by Foxglove poisoning or digitalis toxicity;▪ Women who are pregnant or may become pregnant should not receive amiodarone;▪ Women should discontinue breastfeeding when taking amiodarone;
References	<p><i>2005 Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care.</i> American Heart Association</p> <p><i>Intravenous Medication Guidelines.</i> Massachusetts General Hospital, Medication Education, Safety & Approval Committee (http://www.mgh.harvard.edu/pharmacy/ICU%20Guidelines/amiodarone.htm)</p> <p><i>Intravenous Dilution Standards.</i> GlobalRPH.com (http://www.globalrph.com/dila.htm#AMIODARONE)</p> <p>Siddoway, L. Amiodarone: Guidelines for Use and Monitoring. American Family Physician</p>

For any questions or concerns regarding administration of amiodarone, please contact our physician consultant, Dr. Ken Williams, at kwilliams@lifespan.org or contact the Division of EMS at (401) 222-2401.